

REMARKS

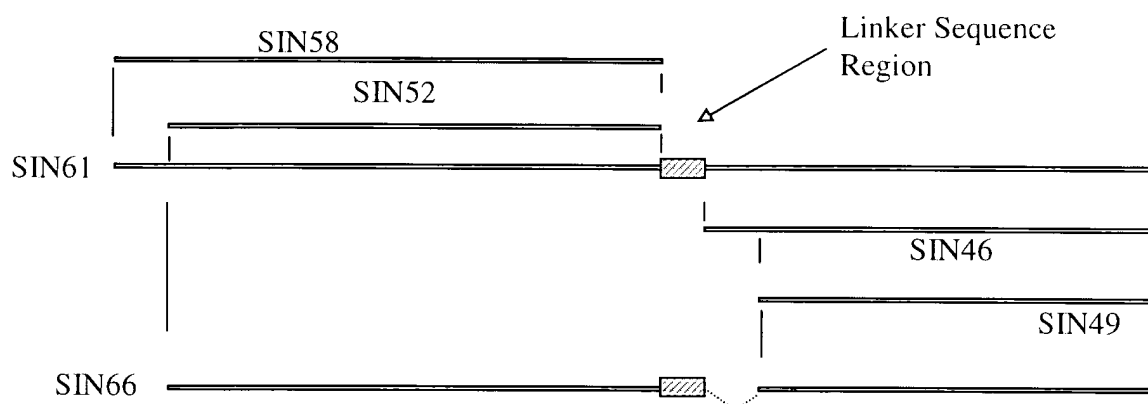
Claims 1-65 and 21 have been canceled. New Claims 22-41 have been entered. New Claims 23-41 substantially track canceled claims 1-16; however, SEQ ID NO's not pertaining to canine IL-12 have been removed. New Claim 25, lists proteins comprising a sequence 90% identical to specified SEQ ID NO's. Support for such proteins can be found in the specification, for example, on page 59, lines 5-9. New Claim 38 expands on the method stated in previous Claim 16. Accordingly, Applicants assert no new matter has been added.

The paragraph spanning page 104, lines 14-23, through page 105, lines 1-13 has been deleted and a replacement paragraph, in which SEQ ID NO:110 and SEQ ID NO:111 have been assigned to previously unidentified sequences, has been submitted. Applicants assert the new paragraph and the previous paragraph are identical except for the addition of the identifying SEQ ID NO's. Accordingly, Applicants assert no new matter has been added.

In addition, Applicants submit herewith a revised Sequence Listing on paper and computer readable form containing SEQ ID NO:1 through SEQ ID NO:111. Applicants submit that the computer readable form (CRF) and the paper copy enclosed herewith are identical and therefore the present application complies with the requirements of 37 CFR 1.821-1.825.

Applicants appreciate the Examiner clearing up the confusion regarding the omission of Claim 21. Although an additional Group (Group V) has been added, Applicants wish to continue to pursue prosecution of Group I claims. In addition, in light of the fact the restriction was not made final, Applicants reiterate their selection of SEQ ID NO:61 with traverse. However, in contrast to prior arguments in which Applicants requested all Group I claims be Examined, Applicants are requesting that in addition to SEQ ID NO:61, SEQ ID NO:46, SEQ ID NO:49, SEQ ID NO:52, SEQ ID NO:58 and SEQ ID NO:66 (along with SEQ ID NO's representing translations and complements) also be considered during examination. Applicants note the claimed invention is a hybrid nucleic acid molecule in which the nucleic acid sequence of the canine IL-12 p35 subunit has been joined to the nucleic acid sequence of the canine IL-12 p40 subunit via a nucleic acid linker. SEQ ID NO:61 represents the sequence of the hybrid nucleic acid molecule. SEQ ID NO:58 and SEQ ID NO:46 represent the sequence of the full length canine IL-12 p48 and p35 subunit genes, respectively, used to construct the molecule represented by SEQ ID NO:61. Therefore, these three SEQ ID NO's are clearly related in that SEQ ID

NO:s 58 and 46 are contained within SEQ ID NO:61. Similarly, SEQ ID NO:66 represents the sequence of a hybrid molecule in which the nucleic acid sequence of the mature, canine IL-12 p35 subunit has been joined to the nucleic acid sequence of the mature, canine IL-12 p40 subunit via a nucleic acid linker. In essence, SEQ ID NO:61 and SEQ ID NO:66 are identical except that the subunit gene sequences joined in SEQ ID NO:66 are slightly shorter than those in SEQ ID NO:61 since the sequences encoding the signal sequence region in each subunit has been removed. Therefore, similar to the situation described above, SEQ ID NO: 49 and SEQ ID NO:52 are both contained within SEQ ID NO:66. For the Examiners convenience, the diagram below depicts an alignment of these individual SEQ ID NO:'s and demonstrates the relationship between the individual sequences.



In addition, the chart below describes the SEQ ID NO:'s listed in the claims along with some related SEQ ID NO:(SEQ ID NO:104; SEQ ID NO:106; SEQ ID NO:107; SEQ ID NO:109) not listed in the claims:

| SEQ ID NO: | Organism | Molecule | Description |
|------------|----------|-----------------------------|----------------------------------|
| 46 | canine | nCaIL-12p35 ₆₆₆ | NAS full length IL-12p35 subunit |
| 47 | | PCAIL-12p35 ₂₂₂ | Translation of SEQ ID NO:46 |
| 48 | | nCaIL-12p35 ₆₆₆ | RC of SEQ ID NO:46 |
| 49 | | nCaIL-12p35 ₅₉₁ | NAS mature IL-12p35 subunit |
| 50 | | PCAIL-12p35 ₁₉₇ | Translation of SEQ ID NO:49 |
| 51 | | nCaIL-12p35 ₅₉₁ | RC of SEQ ID NO:49 |
| 104 | | nCaIL-12p35 ₁₄₅₅ | NAS IL-12p35 subunit 5' end |
| 106 | | nCaIL-12p35 ₁₄₅₅ | RC of SEQ ID NO:104 |
| 52 | canine | nCaIL-12p40 ₉₂₁ | NAS mature IL-12p40 |
| 53 | | PCAIL-12p40 ₃₀₇ | Translation of SEQ ID NO:52 |

| | | | |
|-----|--|-----------------------------|--|
| 54 | | nCaIL-12p40 ₉₂₁ | RC of SEQ ID NO:52 |
| 58 | | nCaIL-12p40 ₉₈₇ | NAS full-length IL-12p40 |
| 60 | | nCaIL-12p40 ₉₈₇ | RC of SEQ ID NO:58 |
| 61 | | nCaIL-12 ₁₅₉₉ | NAS full-length IL-12 single chain (p40) |
| 62 | | PCAIL-12 ₅₃₃ | Translation of SEQ ID NO:61 |
| 63 | | nCaIL-12 ₁₅₉₉ | RC of SEQ ID NO:61 |
| 66 | | nCaIL-12 ₁₅₃₃ | NAS mature IL-12 single chain (p40) |
| 67 | | PCAIL-12 ₅₁₁ | Translation of SEQ ID NO:66 |
| 68 | | nCaIL-12 ₁₅₉₉ | RC of SEQ ID NO:66 |
| 107 | | nCaIL-12p40 ₂₂₆₇ | NAS IL-12p40 subunit |
| 109 | | nCaIL-12p40 ₂₂₆₇ | RC of SEQ ID NO:107 |

The diagram and chart clearly illustrate the overlapping nature of all of these sequences. As a result of the overlapping and identical nature of the fragments, the number of distinct sequences that must be searched and examined would be reduced. In view of the evidence offered above, Applicants submit that a thorough search using SEQ ID NO:61 should suffice for all of these sequences and therefore, Applicants request that all the SEQ ID NO.'s listed in the claims be considered during Examination.

Objections under 37 C.F.R. §§1.821-1.825

The Examiner has objected to the specification for not fully complying with the Sequence Rules in that amino acid sequences greater than 4 amino acids in length are disclosed (pg. 105, lines 12-13) without the required identifying SEQ ID NOs. Applicants have corrected this matter by deleting the paragraph in the specification containing the unidentified sequences and submitting a new paragraph in which SEQ ID NO.'s have been assigned to the sequences.

Rejections under 35 U.S.C. §112, Second Paragraph

The Examiner rejected all pending Claims as being vague and indefinite in that the Claims recited more sequences than the elected invention. Applicants have canceled the previously pending Claims and submitted new claims that list only the SEQ ID NO.'s pertaining to the elected invention.

Applicants believe the claims are now in a condition for allowance. The Examiner is invited to contact the undersigned should any issues remain.

Respectfully submitted,

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